

APPENDIX

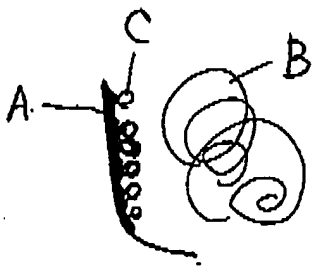


Fig. 32

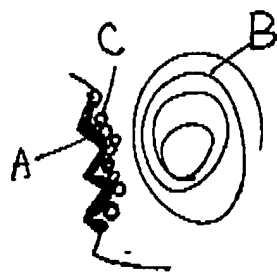


Fig. 33

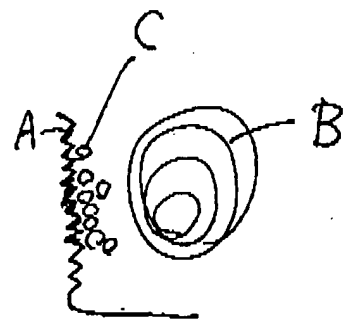


Fig. 34

Japanese Patent Application Laid-Open (JP-A) No. 3-57704

Laid-Open Date: March 13, 1991

Application No. 1-191869

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Applicant: Bridgestone Corporation

TITLE OF THE INVENTION

PNEUMATIC TIRE

[Means for Solving the Problems and Operation]

The invention according to claim (1) is characterized in that a large number of concave portions are provided at a wall surface of a groove formed in a tread portion.

The invention according to claim (2) is characterized in that the depth of the concave portions described in claim (1) is less than 2 mm and the diameter of the largest circumscribed circle is 1 to 3 mm.

The invention according to claim (3) is characterized in that a convex line substantially parallel to the surface of a tire is formed on a wall surface of a groove formed in a tread portion.

The invention according to claim (4) is characterized in that the convex line described in claim (3) has a height and a width of 0.5 to 2 mm, and at least two convex lines are formed.

The invention according to claim (5) is characterized in that a concave line substantially parallel to the surface of a tire is formed in a wall surface of a groove formed in a tread portion.

The invention according to claim (6) is characterized in that the concave line described in claim (5) has a height and a width of 0.5 to 2 mm, and at least two concave lines are formed.

In the pneumatic tire according to claim (1) of the invention, since a large number of concave portions are formed at the wall surface of the groove, these concave portions play a central role in dissipating from the wall surface of the groove a vortex of water, which would otherwise stay on the wall surface. Therefore, the vortex of water which would otherwise stay on the wall surface of the groove can be dissipated, thereby improving drainage performance of the groove. As a result, a decrease in the ground contact area of the tire due to water entering the ground contact surface thereof can be prevented, whereby performance on wet road surfaces can be improved.

Further, when two or more concave lines or convex lines are formed on/in the wall surface of the groove, these concave or convex lines block a vortex of water, which would otherwise spread over the entire groove. Thus, diffusion of the vortex of water can be prevented, thereby improving the drainage performance of the groove. As a result, a decrease in the ground contact area of the tire due to water entering the ground contact surface can be prevented, whereby performance on wet road surfaces can be improved.